

NEW SPECIES OF HELICODISCUS  
FROM THE EASTERN UNITED STATES

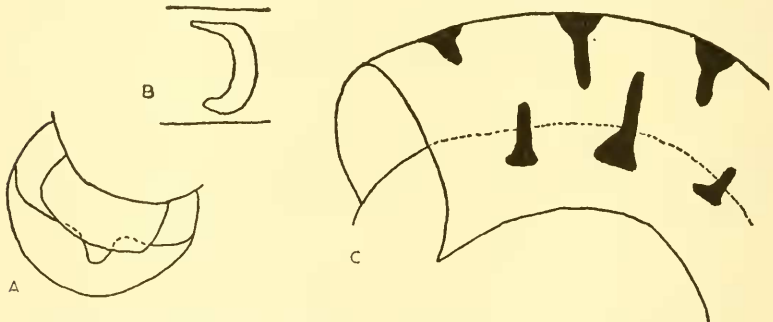
By LESLIE HUBRICHT

*HELICODISCUS MULTIDENS*, new species. Plate 7, D-F; Text fig. 1

Shell discoidal, spire flat or nearly so; whorls  $4\frac{1}{2}$  to 5; pale greenish-yellow, dull, opaque. Umbilicus wide and shallow, showing all the whorls, occupying from 45 to 50% of the diameter of the shell. Whorls well rounded, slowly increasing, the last slowly descending; sculptured with numerous, fine, spiral threads. Aperture lunate, the peristome somewhat thickened within. Within the last quarter whorl there are 3 pairs of teeth on the outer and basal walls. These teeth are radially elongate, raised on a heavy callous ridge, and separated by a rounded sinus. Alternating with these are 3 teeth on the parietal wall. These teeth extend out to about the center of the whorl, are about twice as broad as high, the ends are turned forward, the upper end more so than the lower. Of the 3 sets of teeth the center set is usually more fully developed than the others. As the shell grows, the teeth farthest within are absorbed and a new set added near the aperture.

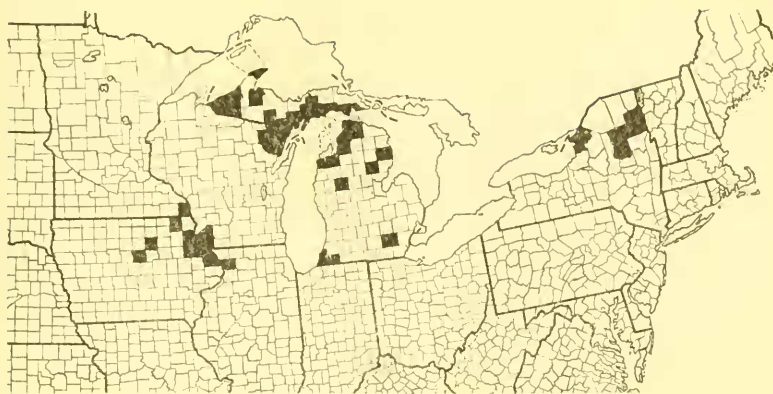
Height, 1.88 mm. Diameter, 4.75 mm. Umbilicus diameter, 2.22 mm. Aperture height, 1.55 mm. 4.5 whorls. Holotype.

*Distribution*: — *Tennessee*: Putnam Co.: in Jared Hollow Cave, 3 miles northeast of Chestnut Mound (Thomas C. Barr, Jr., coll.). DeKalb Co.; in Jim Cave, 1.5 miles southeast of Dowelltown, holotype 207798 U.M.M.Z., paratypes 17063, collection of the author; in Avant Cave, 1 mile east of Dowelltown.



*Helicodiscus multidens* Hubricht; A, view of central pair of teeth. B, parietal tooth from above. C, diagram of tooth arrangement.

*Helicodiscus multidens* is most closely related to *H. triodus* Hubricht. In *H. triodus* the teeth are smaller, and the sets of 3 teeth are placed at irregular intervals in the last whorl, not crowded near the aperture. *H. multidens* is a rare snail, found



Map 1. Distribution of *Helicodiscus shimeki* Hubricht as represented by specimens in the collection of the author and in the collection of the University of Michigan.

only in caves. Of the nine specimens so far collected only one was found alive.

*HELICODISCUS SHIMEKI*, new species.

Plate 7, A-C; Map 1.

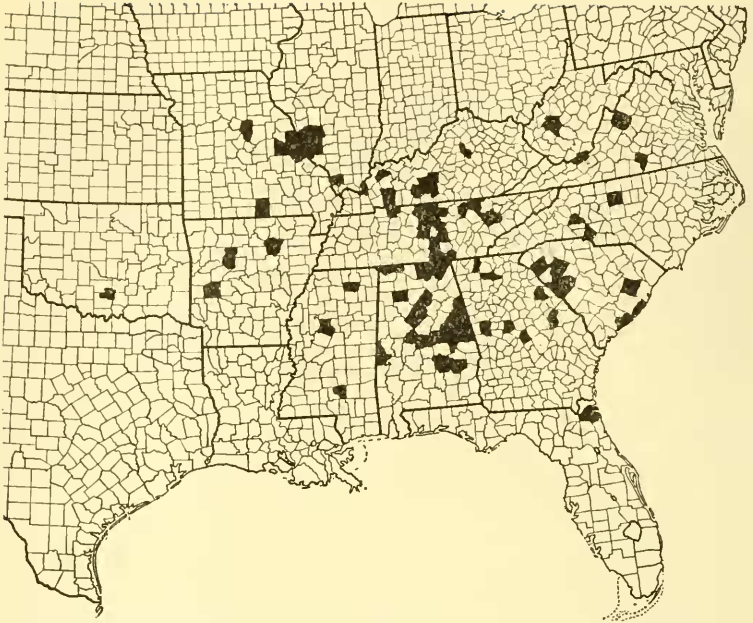
Shell discoidal, pale yellow, somewhat shining, translucent, spire flat or slightly convex. Umbilicus wide, shallow, showing all the whorls, occupying about 50% of the diameter of the shell. Whorls 5 to 6, well rounded, very narrow and slowly increasing; nuclear whorls with faint spiral striae; later whorls with numerous spiral threads. Aperture lunate, peristome thin. Within the last whorl there are usually three pairs of small conical teeth; on the outer and basal walls, the earlier teeth are absorbed.

Height, 1.7 mm. Diameter, 4.2 mm. Umbilicus diameter, 2.1 mm. Aperture height, 1.7 mm. 5.2 whorls. Holotype.

*Type locality*: Iowa: Delaware Co.: Backbone State Park, holotype 207796 and paratypes 207797 U.M.M.Z., other paratypes 13807, collection of the author.

*Helicodiscus shimeki* is a species of the northern United States and probably southern Canada, although the author has seen no specimens from there. It ranges from Iowa eastward to northern New York. Map no. 1.

*Helicodiscus shimeki* may be readily distinguished from *H. parallelus* (Say) by its more slender whorls and its broader, shallower umbilicus. It resembles *H. salmonaceus* W. G. Binney in its proportions, but the thread striae are coarser, and the umbilicus is not quite so broad. It stands somewhat intermediate between these two species. It is named in honor of the late Bohumel Shimek of Iowa City, Iowa.



Map 2. Distribution of *Helicodiscus notius* Hubricht as represented by specimens in the collection of the author.

*HELICODISCUS NOTIUS*, new species.

Plate 9, N-P; Map 2.

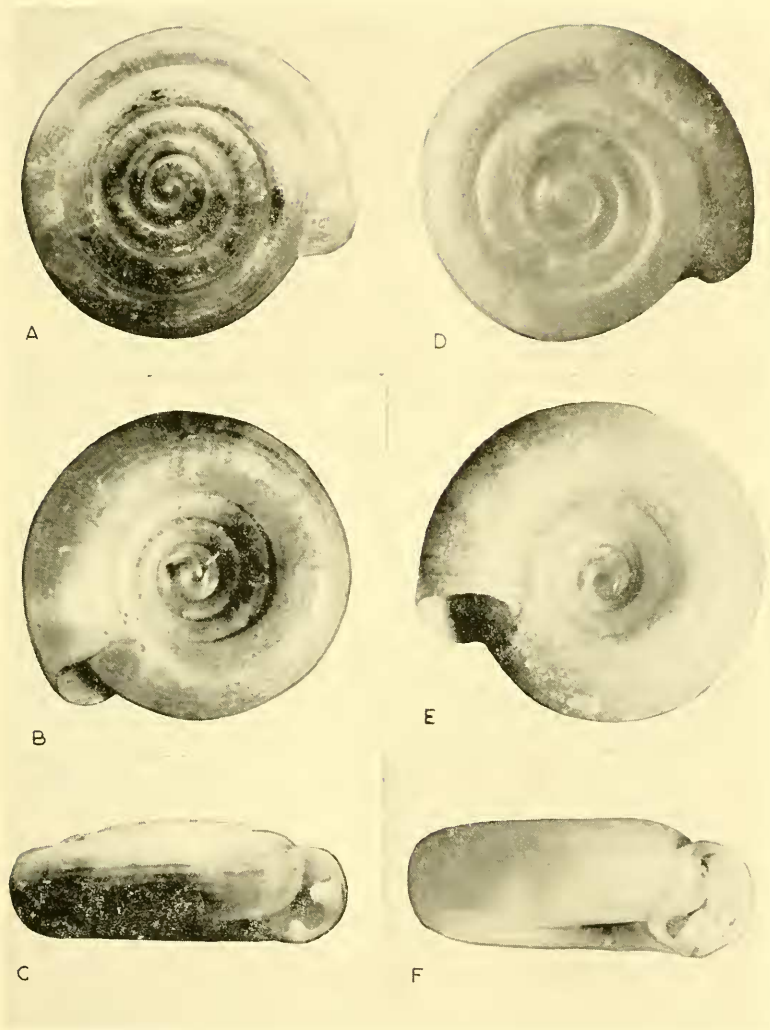
Shell discoidal, the spire flat or nearly so; whorls 5 to 5½; pale yellowish, dull, translucent when young, becoming opaque with age. Umbilicus wide and shallow, showing all the whorls, occupying from 40 to 45% of the diameter of the shell. Whorls well rounded, slowly increasing, sutures well impressed; sculptured with numerous spiral threads. Aperture lunate, peristome thin. Within the last whorl there are usually 2 or 3 pairs of conical teeth, one on the basal wall and one above it on the outer wall.

Height, 1.66 mm. Diameter, 3.66 mm. Umbilicus diameter, 1.62 mm. Aperture height, 1.04 mm. 5 whorls. Holotype.

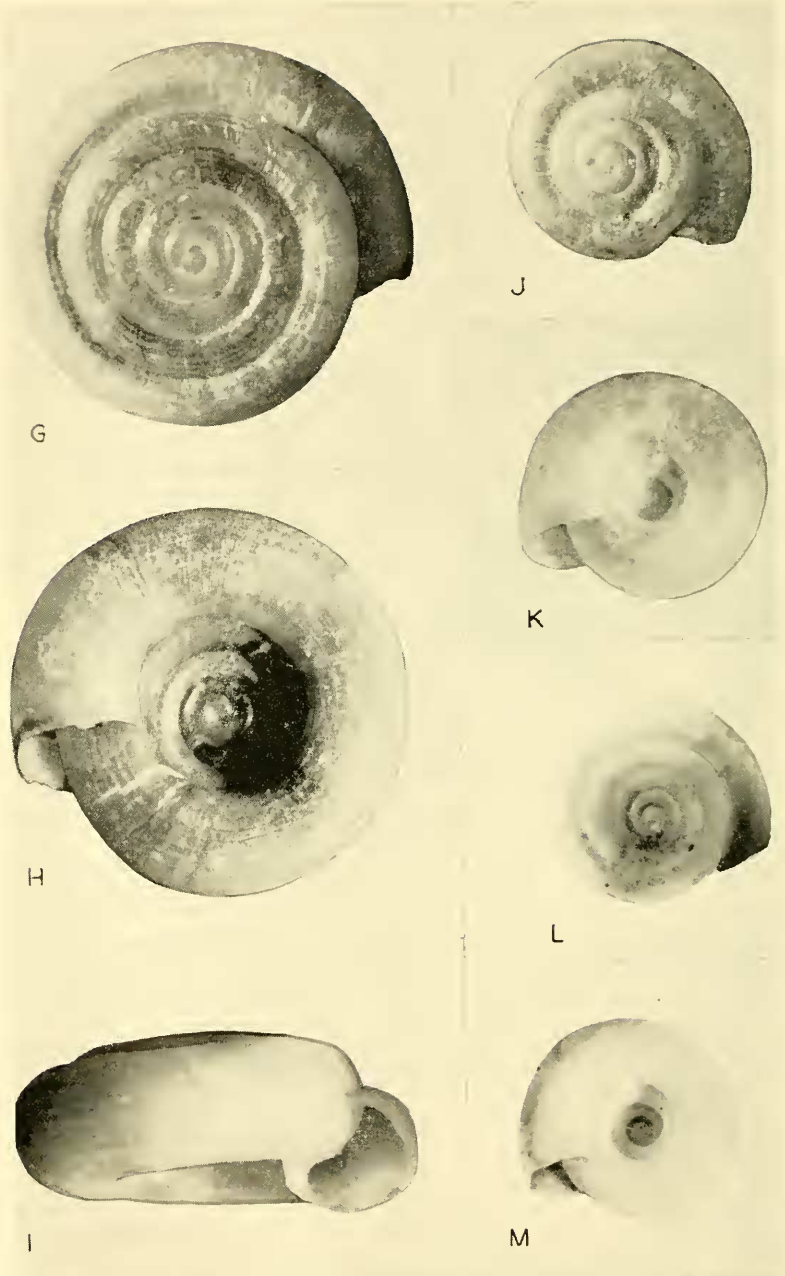
*Type locality: Alabama: Jackson Co.: side of Keel Mtn., Paint Rock, holotype 207792 and paratypes 207793 U.M.M.Z., other paratypes 17588, collection of the author.*

*Helicodiscus notius* is found over most of the southeastern United States, ranging from the Gulf north to Virginia and west to Missouri and Oklahoma. See map no. 2.

*Helicodiscus notius* differs from *H. parallelus* (Say) in being a little larger due to the additional whorl; in having a broader, shallower umbilicus; and in having the thread striae on the embry-



Holotypes, A-C, *Helicodiscus shimeki* Hubricht. D-F, *H. multidens* Hubricht.



Holotypes. G-I, *Helicodiscus notius specus* Hubricht. J & K, *H. hadenoecus* Hubricht. L & M, *H. jacksoni* Hubricht.

onic whorls more strongly developed. It is most closely related to *H. eigenmanni* Pilsbry, from which it differs in being smaller and in having a larger umbilicus.

*HELICODISCUS NOTIUS SPECUS*, new subspecies. Plate 8, G-1.

Differing from the typical form in being without the internal teeth in shells larger than two and one-half whorls. The last half whorl slowly descends to the aperture, and the peristome is often much thickened.

*Type locality: Kentucky: Barren Co.: in Burnette Cave, 0.6 mile west of Park City, holotype 207794 and paratypes 207795 U.M.M.Z., other paratypes 17027, collection of the author.*

*Helicodiscus notius specus* is known only from the type locality. In this cave, it was feeding on the guano of the cave-cricket, *Hadenoeus subterraneus* (Scudder), in company with *Carychium stygium* Call. Typical *H. notius* is occasionally found in caves also, but only where leaves have been washed or blown in. It never has become a guano feeder.

*HELICODISCUS SALUDENSIS* (Morrison)

*Gastrodonta (Clappiella) saludensis* Morrison, 1937, Proc. Biol. Soc. Wash. 50-58, Pl. 4, figs. 1-4.

*Clappiella saludensis* (Morrison), Pilsbry, Land Moll. N. Amer. II, p. 433, fig. 233.

I believe that this species should be placed in the genus *Helicodiscus*. It is so like *H. parallelus* (Say) in its general appearance that one needs a lens to distinguish it. *H. fimbriatus* Wetherby has a similar pattern of internal teeth, although they are not as regularly alternating.

*TROGLODISCUS*, new subgenus.

Shell with numerous, fine, revolving, epidermal fringes; but without the revolving ridges of *Helicodiscus* s.s. There are no internal teeth at any stage of growth.

Type species: *Helicodiscus barri*.

*HELICODISCUS BARRI*, new species. Plate 9, R-T.

Shell small, pale greenish-yellow, subtranslucent, thin, depressed; spire low, convex; whorls 4 to 4½, well rounded, sutures well impressed. Umbilicus moderately large and deep, contained about 3 times in the diameter of the shell. Sculpture of numerous, fine, revolving epidermal fringes. There being from 40 to 50 of these fringes on the last whorl. Aperture lunate, peristome thin. There are no internal teeth at any stage of growth.

Height, 1.8 mm. Diameter, 3.9 mm. Umbilicus diameter, 1.4 mm. Aperture height, 1.3 mm. 4.5 whorls. Holotype.

Distribution: *Tennessee: Dickson Co.: in Columbia Caverns, 2 miles southwest of Van Leer, holotype 207799 and paratypes*